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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,682	01/17/2002	Julie Ann Ward	10019569-1	3815

7590 03/24/2005

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EXAMINER

LE, HIEU C

ART UNIT	PAPER NUMBER
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2142

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/052,682

Applicant(s)

WARD ET AL.

Examiner

Hieu c. Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 14 and 15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-8 and 10 is/are rejected.
- 7) ☒ Claim(s) 4-5, 9, 14-15 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1-17-02
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Election/Restriction

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-10, 14-15 drawn to a method of partitioning ports associated with each node into a first and second set of ports, classified in class 709, subclass 224.

II. Claims 11-13, 16-20, drawn to a method of identifying one or more failure modes in a primary interconnect fabric, wherein the primary interconnect fabric carries communications, classified in class 709, subclass 239.

III. Claims 21-30, drawn to a fabric design tool that generates a primary design for the interconnect fabric, classified in class 700, subclass 29.

2. Inventions I, II and III are related as combination and subcombinations. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP. § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the broadest combination claim i.e. claim 1 does not recite a particular "identifying one or more failure modes in a primary interconnect fabric" found in the broadest subcombination II, i.e. claim 11 and does not recite "a set of design information and a fabric design tool that generates a primary design for the interconnect fabric", found in the broadest subcombination III, i.e., claim 21. The subcombinations have separate utility such as for subcombination II, optimizing flow connections between nodes using dominant failure modes to mask the occurrence of the dominant failure, and such as for subcombination III, providing reliability to an interconnect fabric in response to a set of design information.

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3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

4. A telephone call was made to Richard Lange on 3/15/05 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-10, 14-15. Affirmation of this election must be made by applicant in replying to this Office action. Group II, Claims 11-13, 16-20 & Group III, Claims 21-30 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).

6. The instant application is a CIP of application 09/707,227. However, the subject matter in claims 1-10, 14-15 is not disclosed in application 09/707,227 and are entitled for the filing date of the instant application only (1/17/2002).

Claim Rejections - 35 U.S.C. § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351 (a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claim 1,6-7, 10 are rejected under 35 U.S.C. 102(e) as anticipated by
Albert et al. (US.Pat. 6,687,222).

As to claim 1, Albert discloses a method of providing reliability to an interconnect fabric for communication among a set of nodes, the method comprising;

partitioning ports associated with each node into a first set of ports and a second set of ports [specifying sets of flows to be serviced as primary (first set) and a set of flows to be serviced as backup (second set) (col. 3, lines 49-62). A flow is identified by port numbers (col. 7, lines 21-27) e.i a set of ports is assigned as a primary (first set of ports) and a set of ports is assigned as a backup (second set of port).

forming a primary interconnect fabric among the first set of ports in response to a set of flow requirements (col. 8, lines 30-38); and

forming a backup interconnect fabric among the second set of ports wherein the backup interconnect fabric carries a portion of communications carried by the primary fabric so as to protect against occurrence of a failure in the primary fabric (col. 4, lines 4-13 & col. 28, lines 1-33).

As to claim 6, Albert further discloses wherein the set of nodes includes source nodes and terminal nodes [two end stations (col. 7, lines 21-23); Fig. 1, server node (source node) and user (terminal)].

As to claim 7, Albert discloses wherein each node is associated with at least two ports [set of ports (col. 8, lines 30-31) i.e more than one port].

As to claim 10, Albert further discloses wherein the second set of ports includes one port for each node [a set of ports (col. 8, lines 30-21) includes one port].

Claim Rejections - 35 U.S.C. § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

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9. Claims 2-3, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albert et al (US Pat. 6,687,222) as applied to claim 1 above and in view of Ward, Julie et al. "storage Area Network Fabric Design", Power Point Present given at the Math Sciences Research Institute Conference on Combinational Design, California, 11/8/2000.

As to claim 2, Albert further discloses wherein the forming the backup interconnect fabric comprises generating arrangements of flow sets in response to the flow requirements (col. 8, lines 5-31, col. 28, lines 1-16).

Albert does not discloses determining feasibility of merging pairs of candidate flow sets and merging a pair of the flow sets.

Ward discloses assigning flows to host and device ports. Create modules to support a given flow assignment of (i.e. ports that support a given assignment are grouped together in modules and modules are created. For each feasible port assignment for a flow, create necessary Modules (groups of ports) to support this and previous assignments chose and add (merge) this flow's assignments according to the least cost set of modules (group of ports) (p. 4, the last slide).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Ward's teachings to modify Albert's method determining feasibility of merging pairs of candidate flow sets and merging a pair of the flow sets in order to generate a fabric design of the least cost.

As to claim 3, Ward further discloses wherein the merging the pair of the flow sets alleviates at least one port violation with respect to the second set of ports (p. 3, slide "Heuristics").

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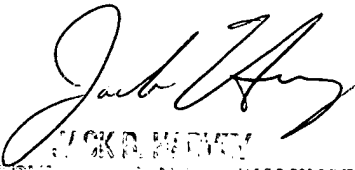
As to claim 8, Ward further discloses the partitioning further comprising partitioning the ports associated with each node into a number of additional sets of ports (p. 4, slide "Quickbuidr").

Allowable Subject Matter

10. Claims 4-5,9,14-15 are objected to as being dependent upon a rejected base claim, ~~but~~ would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Hieu Le whose telephone number is (571) 272-3897. The examiner can normally be reached on Monday to Friday from 8:00 AM to 4:00 PM.

The fax number of this Group 2142 (571) -272-3897. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.


JACOB H. LE
SUPERVISOR, ART UNIT 2142